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15 May 1962

ITEM OF INTEREST

Prepared by

Aerospace Information Division

SUBJECT: Some Space-Exploration Data

SOURCE: Rozenblit, Natan Pavlovich. Lyudyna krokuye u vsesvit (Man enters the Universe). Kyiv, Vyd-vo TsK LKSMU "Molod", 1961. 160 p.

This Ukrainian booklet, which is written in popular journalistic style, does not give the sources (Western or Soviet) of its information. The following items have been selected as of interest:

(1) Atomic Lunar Rocket (pp. 136-137)

A supply of inert material (80% of the rocket's weight) heated in the nuclear reactor would leave the nozzle at a speed of 5 to 6 km/sec; 1 kg uranium could propel a 60-ton rocket to the Moon at a speed of 12 km/sec. By replacing the rocket propellant by atomic bombs, the weight of the rocket could be reduced considerably so that an atomic bomb (explosion) engine would weigh 100 kg at most.

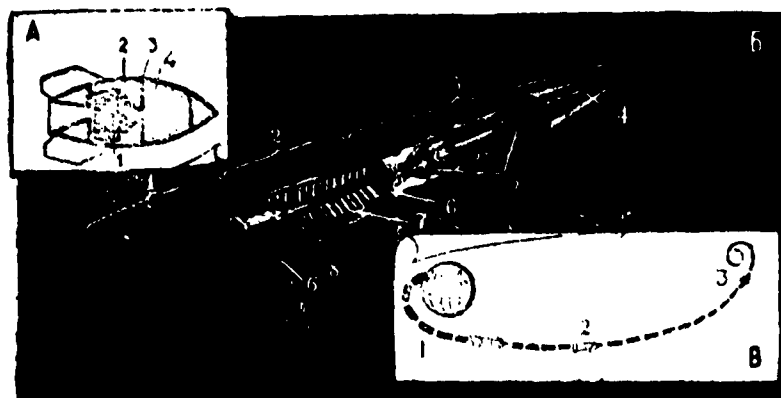


Fig. 1. Atomic rocket

(B) Trajectory of multistage rocket. 1. 1st-stage phase. 2. 2nd-stage phase. 3. Liquid-propellant-rocket phase.

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(2) Meson (Photon) Rocket (pp. 152-153)

Data from atomic physics now indicate that the photon rocket proposed by Saenger in 1951 should more properly be called a meson rocket. This rocket would have to be launched far from the earth, since its meson beam would be dangerous to life at a distance of 1,000,000 km. The Soviet scientist K. Stanyukovich suggests that a satellite of Jupiter or Saturn, or a large asteroid, might be gradually converted into an interstellar ship powered by a meson rocket and then broken out of its orbit for the first interstellar trip.

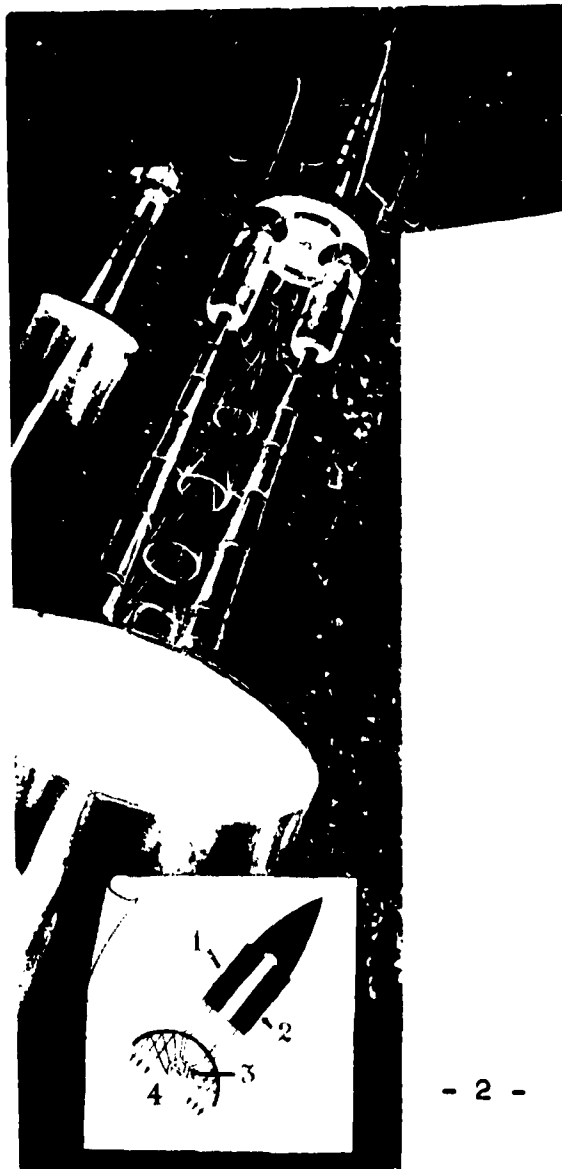


Fig. 2. Photon rocket. 1. Particle accelerator. 2. Antiparticle accelerator. 3. Annihilation. 4. Meson flow.